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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/851,587	05/08/2001	Murali Chaparala	ONX-117A	2627

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EXAMINER

ZAVERI, SUBHASH

ART UNIT PAPER NUMBER

2862

DATE MAILED: 09/11/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/851,587

Applicant(s)

CHAPARALA, MURALI

Examiner

Subhash A Zaveri

Art Unit

2862

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. This application has been filed with informal drawings that are acceptable for examination purposes only. Formal drawing will be required when the application is allowed.

Claim Rejections 35 USC §103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter, as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-29** are rejected under 35, U.S.C. 103 (a) as being unpatentable over Stranjord et al. (US 5,059,783) in View of Edwards et al. (US 6,404,942).

As to claim 1, Stranjord et al. disclose method for measuring a position of a micro machined optical element 10 of Fig. 1 comprising:

a magnetic sensor 40 of Fig. 3 on the micro machined optical element;

exposing the magnetic sensor to a magnetic field as shown in Figs.1-3
with a magnet 20 of Fig.3;

evaluating position of element 20 of Fig.3 with element 22 of Fig.3;

Stranjord et al lack in showing a change in property of the sensor position with respect to optical element change. The use the change in property of the sensor with respect to optical element change is known in the art. Edwards et al (US 6,404,942) is cited to show this system in Figs 1-4 as optical element changes (column 5-6, line 5-65). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include this measuring system of the property changes of the sensor with respect to the optical wave guide changes of Edwards et al. in the system of Stranjord et al. to provide effective and accurate sensor parameter for detecting faster switching time in shorter actuation distance.

As to claims 2-3 Edwards et al. disclose a method for a position of a micro-machine optical element as shown in Figs. 1-14 comprises:

detecting a magnetic field of element 20 as shown in Figs.1-14
to actuate the machined element changes as shown in Figs.1-5;

the micro machined optical element includes a moveable portion 22 of Fig.2 and the sensor is located on the moveable portion as shown in Figs.1-14.

As to claims 4-9 Edwards et al. disclose a method for a position of a micro-machine optical element as shown in Figs. 1-14 comprises:

the magnetic sensor is selected from the group consisting of magneto-resistive sensors, giant magneto-resistance sensors, magnetic tunnel junction devices, magneto optic sensors 20 as shown in Figs.1-14;

the micro machined optical element includes a fixed portion 28 of Fig.7 and the sensors located on the fixed portion as shown in Figs.1-14;

the sensor 15 of Fig.7 is located on a side-wall of the fixed portion 28 of Fig.7;

the fixed portion includes a base element 24 of Fig.7 and it is located on the fixed portion;

the sensor that is located on the movable portion and the sensor that is disposed on the fixed portion are electrically coupled in a bridge circuit as shown in Figs.13-14;

As to claims 10-17 Edwards et al. disclose a method for a position of a micro-machine optical element as shown in Figs. 1-14 comprises:

the bridge circuit is a Whetstone bridge circuit as shown in Figs 13-14;

the magnetic sensor detects a magnetic field that is separate from a magnetic field that actuates the micro machined optical element as shown in Fig.1-14;

a magnetic structure 20 of Fig.1-14 located on the micro machined optical element creates the direction of the sense magnetic field as shown in Figs.1-14;

the magnetic sensor is selected from the group consisting of magneto-resistive sensors, giant magneto-resistance sensors, magnetic tunnel junction devices, magneto optic sensors 20 as shown in Figs.1-14

the sensor characterized by a serpentine shape as shown in Fig.13

the magnetic sensor includes two or more magnetic sensors as shown in Fig.1;

the two or more sensors are coupled together in a bridge circuit as shown in Figs.12-13;

the bridge circuit is a Wheat-stone bridge circuit as shown in Figs.12-14.

As to claims 18-22 Edwards et al. disclose a method for a position of a micro-machine optical element as shown in Figs. 1-14 comprises:

the moveable portion is moveable with respect to an axis as shown in Figs.1-3;

the magnetic material is located parallel to the axis as shown in Figs.1-14;

the magneto-resistive sensor has a "C" shape having a gap as shown in Fig.9;

the position of the moveable element and the magnetic material is located within the gap as shown in Figs.7-11;

the magnetic material is located perpendicular to the axis as shown in Figs. 1-14.

As to claims 23-25 Edwards et al. disclose a method for a position of a micro-machine optical element as shown in Figs. 1-14 comprises:

the measuring a temperature and compensating for a change in the property of the magnetic sensor with temperature as shown in Figs.1-3;

the compensating step includes determining a relationship (column 5, line 5-65) between the property of the magnetic sensor and the measured temperature as shown in Figs.1-3;

the compensating step includes regulating the temperature to maintain the temperature within a desired range (columns 5-6, lines 5-65) as shown in Figs.1-14.

As to claims 26-29 Edwards et al. disclose a method for a position of a micro-machine optical element as shown in Figs. 1-14 comprises:

the exposing the sensor to the magnetic field and measuring a change in a property of the sensor as a position of the micro machined optical element changes as shown in Figs1-14;

the measuring of the temperature and compensating for a change in the property of the sensor with temperature as shown in Figs.1-14;

the compensating step includes determining a relationship between the property of the magnetic sensor and the measured temperature as shown in Figs.1-14;

the compensating step includes regulating the temperature to maintain the temperature within a desired range as shown in Figs.1-14.

Prior Art cited

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. schroeder et al. (US 6198856) is cited to show a device for optical switch with test ports.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Subhash Zaveri whose telephone number is (703) 305 1972. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner supervisor, Edward Lefkowitz can be reached on (703) 305-4816. The faxes phone number for this group is (703) 305-3432.

Any inquiry of general nature or relating to the status of this application should be directed to the Customer Service at (703) 308-0596.

Subhash Zaveri
Patent Examiner
Tech Center 2862
September 6 2002.



EDWARD LEFKOWITZ
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